REMARKS

Claim 1 has been amended to clarify that the invention is directed towards a method of saving power in a color organic electroluminescent display wherein the color of the elements having the highest light emitting efficiency is determined, and wherein a monochrome image is displayed using only the determined color elements. Support for such amendment may e found in original claim 1 itself (which defines efficiency in lines 2-3 with respect to light emitting efficiency), and page 4, lines 9-13 (referencing use of only the determined most efficient color emitting elements to display a monochrome image). Claim 6 has been similarly amended (with similar support) to clarify that the invention is directed towards a color organic electroluminescent display comprising a plurality of differently colored light emitting elements having different light emitting efficiencies, and means for displaying a monochrome image using only the colored light emitting elements having the highest light emitting efficiency.

Claim Rejections - 35 USC § 103

Claims 1, 4, 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (6,472,804 B2) in view of Wilson (6,507,350) and Kubes et al. (6,035,180). Regarding Claims 1 and 6, the Examiner states Mueller et al. teaches a method of saving power in a color organic electroluminescent display of the type having color emitting elements with different light emitting efficiencies (Col. 3, Lines 50-55, Col. 4, Lines 4-7); Wilson teaches a method of saving power in a color organic electroluminescent display (Col. 1, Lines 25-28 OLED as an OEL display), comprising the steps of: a) determining the color of the elements having the highest efficiency (Col. 3, Lines 4-14, Lines 27-32 discusses chrominance data representing color data and efficiency and adding luminance to represent as pixel data to be displayed per efficiency); b) converting a color digital image to be displayed on the display to a monochrome image (Col. 5, Lines 25-48); and c) displaying the monochrome image using the determined color elements (Col. 6, Lines 18-33, Col. 5, Lines 25-48); and that it would have been obvious to one of ordinary skill in the art at the time of the invention to use Wilson's teaching a monochrome display saving power by converting digital video signal in to

monochrome color signal and displaying on monochrome display (Col. 6, Lines 18-33, Col. 5, Lines 25-48). The Examiner further states that although neither Mueller et al. nor Wilson specifically teach using the light emitting element having the highest light emitting efficiency, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the element having the highest light emitting efficiency, specifically the organic EL green/yellow as taught by Kubes, color organic electroluminescent display (Col. 2, Lines 4-23) a) determining the color of the elements having the highest efficiency (Col. 10, Lines 28-31). This rejection is respectfully traversed.

Contrary to the Examiner's assertions, there does not appear to be any teaching in Mueller et al. with respect to a method of saving power in a color organic electroluminescent display of a type specifically having color emitting elements with different light emitting efficiencies. While OLED technology is referenced, neither Col. 3, Lines 50-55 or Col. 4, Lines 4-7 of Mueller et al cited by the Examiner makes any reference to use of color emitting elements with necessarily different light emitting efficiencies. Rather, Mueller et al teaches use of a specific type of transparent electrode in devices thereof to provide higher light efficiency, and to therefore help save energy.

Further, Wilson does not teach a method of saving power in a color organic electroluminescent display including any of the steps of: a) determining the color of the elements having the highest light emitting efficiency; b) converting a color digital image to be displayed on the display to a monochrome image; and c) displaying the monochrome image using only the determined color elements. While OLED technology is again referenced, Col. 3, Lines 4-14, Lines 27-32 of Wilson referenced by the Examiner does not teach determining the color of light emitting elements having the highest light emitting efficiency, but rather such passages refer to brightness sensitivity of human vision in relation to RGB primary components. Further, Col. 5, Lines 25-48 does not teach converting a color digital image to be displayed on the display to a monochrome image, but rather conversion of RGB data to YCbCr data. As YCbCr data includes Cb and Cr chrominance data, it too is a color data signal (although in a different format than the original RGB data). Col. 6, lines 18-33 of Wilson explains a monochrome embodiment wherein the chrominance CbCr signals are turned off and only the luminance Y signal is

employed. There is no teaching in Col. 6, Lines 18-33 and Col. 5, Lines 25-48, however, to selectively use such luminance signal to display the monochrome image using only color elements determined to have a highest light emitting efficiency. Rather, as indicated at col. 5, lines 35-38, such luminance signal Y still employs R, G, B components (so as to obtain a neutral monochrome, as the luminance signal Y obtains no chrominance data), and accordingly each of the blue 22, red 23 and green 24 cells of each pixel 21 would be employed in displaying such monochrome image in the invention of Wilson.

Finally, Kubes et al simply mentions an observation that he has found that the green/yellow electroluminescent material is the most efficient color. There is no teaching, however, to selectively employ such green/yellow elements in a multi-color electroluminescent display when employing a color image converted to a monochrome image in accordance with the present invention, especially in view of the mistaken characterizations of the teachings of Mueller et al and Wilson as explained above. A prima facie case of obviousness over Mueller et al. in view of Wilson and Kubes et al accordingly has not been established with respect to independent claims 1 and 6. Dependent claims 4 and 9 are believed patentable for at least the same reasons.

Claims 2, 3, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (6,472,804 B2) in view of Wilson (6,507,350) and Kubes et al. (6,035,180) as applied to claims 1, 4, 6, 9 above, and further in view of Gettemy et al. (6,603,469 B1). Regarding Claim 2, 7, the Examiner states Mueller et al. modified by Wilson and Kubes et al. teaches a method of saving power in a color organic electroluminescent display of the type having color emitting elements with different light emitting efficiencies (Col. 3, Lines 50-55, Col. 4, Lines 4-7); Gettemy teaches the display is in a battery powered device, and further comprising the step of monitoring the power level of the battery, and converting to a power saving mode of operation when the battery power reaches a predetermined level (Col. 2, Lines 16-19, Col. 7, Lines 27-47, Col. 8, Lines 27-56 and figure 9); and that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the power saving method as taught by Gettemy with the electroluminescent display and method as taught by Mueller et al. modified by Wilson and Kubes et al. to reduce battery

power consumption in a portable electronic device. Regarding Claim 3, 8, the Examiner states Gettemy teaches the steps of: providing a battery saving mode switch on a device that includes the color organic electroluminescent display, and switching to a battery saving mode using the mode switch (Col. 2, Lines 64-67, Col. 7, Lines 27-47, Col. 8, Line 53, Col. 9, Line 17 and figure 9, 10). This rejection is respectfully traversed.

As discussed above, the basic proposed combination of Mueller et al. modified by Wilson and Kubes et al fails to establish a prima facie case of obviousness with respect to claims 1 and 6. Further reliance on Gettemy fails to overcome the basic deficiencies in the proposed primary combination of references, as the proposed power saving monochrome mode of Gettemy depends on a very specific implementation of a "multi-mode" display, which relies upon two separate light sources. More specifically, Gettemy's color mode uses multi-color backlighting elements **650** in combination with an LCD layer **630** for color image pixel control, while his less energy consuming monochrome mode relies upon ambient lighting reflected from a transreflector **640** in combination with the LCD layer for monochrome image pixel control, as described in col. 9, lines 51-55. Such energy saving transreflector mode, however, could not be applied to an electroluminescent display in accordance with the present invention. Accordingly, the further combination of teachings relied upon by the Examiner clearly also does not establish a prima facie case of obviousness.

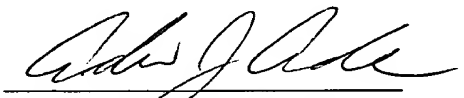
Claims 5, 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (6,472,804 B2) in view of Wilson (6,507,350) and Kubes et al. (6,035,180) as applied to claims 1, 4, 6, 9 above, and further in view of Hill, Jr. (5,790,096). The Examiner states Mueller et al. modified by Wilson and Kubes et al. teaches a method of saving power in a color organic electroluminescent display of the type having color emitting elements with different light emitting efficiencies (Col. 3, Lines 50-55, Col. 4, Lines 4-7); Hill, Jr. teaches the step of converting a color digital image to a monochrome digital image comprises combining {fraction (5/16)}, {fraction (9/16)}, and {fraction (2/16)} of the red, green and blue color signals, respectively (Col. 7, Lines 20-34, Table 1); and that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the weighting factors as taught by Hill with

the electroluminescent display as taught by Mueller et al. modified by Wilson and Kubes et al. to implement the properly balanced monochrome image. This rejection is respectfully traversed.

As discussed above, the basic proposed combination of Mueller et al. modified by Wilson and Kubes et al fails to establish a prima facie case of obviousness with respect to claims 1 and 6. Further reliance on Hill fails to overcome the basic deficiencies in the proposed primary combination of references. As previously explained, Hill discloses a controller for controlling all kinds of displays. In a first mode, the controller uses only the green portion of a video signal to drive the red, green and blue inputs of a color display to produce a monochrome image. Thus, in this mode, all of the color elements are driven (see Col 7, lines 16-20) by the same amount, and no power saved thereby. In a second mode, the controller converts a color image signal to a monochrome signal according to the weighting chart in Table 1, and the monochrome signal is then used to drive a monochrome display having only one color of light emitting elements (see Col 7, lines 21-30). Thus, this mode also is not directed towards saving power on a color display. Neither of these modes suggest Applicant's invention, which is to save power in a color electroluminescent display of the type having color emitting elements with different light emitting efficiencies by selectively driving only the color elements of the color display having the highest light emitting efficiency with a converted monochrome image signal derived from an input color digital image. Further, the weighting factors for each color described in Hill with respect to conversion of a color signal to a monochrome signal (similarly to the R, G, B weighting factors employed in the Y luminance signal equation at col. 5, line 35 of Wilson) do not relate to differential light emitting efficiencies for different color emitting elements, but rather to color mixing standards for obtaining desired monochrome color hues. Accordingly, the further combination of teachings relied upon by the Examiner clearly also does not establish a prima facie case of obviousness.

Accordingly, it is believed therefore that the Examiner has still failed to state a *prima facie* argument for obviousness, and Applicant is entitled to patentability of claims 1-10. In view of the foregoing remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the Examiner is earnestly solicited. Should the Examiner believe any remaining issues may be resolved via a telephone interview, the Examiner is encouraged to contact Applicants' representative at the number below to discuss such issues.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.